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EXAMINER	
HAN, JASON	

ART UNIT	PAPER NUMBER
2875	

DATE MAILED: 11/10/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/733,875	ROTHAN ET AL.	
	Examiner	Art Unit	
	Jason M Han	2875	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *11 December 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-48* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-48* is/are rejected.

7)☒ Claim(s) *1,9,13,21,25,32,35 and 40* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *11 December 2003* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Drawings

1. The drawings are objected to because the figures are not clearly distinguished. It is under the assumption that the drawings are colored and were scanned in, providing for the poor contrast. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

2. The disclosure is objected to because of the following informalities:

   a. Page 1, Line 21: grammatical error – please rewrite to read "circuit with the plurality of light sources";

b. Page 1, Line 29: misspelling – please replace with "there through"; the error is consistent throughout the application.

Appropriate correction is required.

Claim Objections

3. Claim 1 is objected to because of the following informalities:

c. In lines 11 and 13 of the claim: misspelling – please replace with "there through". Appropriate correction is required.

4. Claims 9, 21, 32, and 40 are objected to because of the following informalities:

d. In lines 2 and 6 of the claim: misspelling – please replace with "there through". Appropriate correction is required.

5. Claims 13 and 35 are objected to because of the following informalities:

e. In line 12 of the claim: misspelling – please replace with "there through". Appropriate correction is required.

6. Claim 25 is objected to because of the following informalities:

f. In line 13 of the claim: misspelling – please replace with "there through". Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 26-27 and 33-34 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

8. Claims 26-27 and 34 recites the limitation "plurality of light sources" within the claims. There is insufficient antecedent basis for this limitation in the claim.

9. Claims 33-34 recites the limitation "housing" in the first line of the claims. There is insufficient antecedent basis for this limitation in the claim. The applicant must positively claim either the first or second housing.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

10. Claims 13-15, 17-18, and 21-22 are rejected under 35 U.S.C. 102(e) as being anticipated by Pisula (U.S. Publication 2004/0095776).

11. With regards to Claim 13, Pisula discloses a glow tube illumination device and illumination system for bicycles including:

- a plurality of light sources [Figures 3-4: (146)];
- a source of power [Figures 9-10: (299)];
- an electrical circuit [Figures 3-4: (122); Figures 9-10: (59); Figure 11; Page 3, Paragraph 31] connecting the power source with the plurality of light sources;
- at least one switch connected in the electrical circuit [Figure 9: (287)];

- a diffuser [Figures 3-4: (101)] positioned adjacent at least one individual light source of the plurality of light sources, wherein the diffuser is made of a translucent resilient material defining a central passageway extending there through and being of sufficient dimension to accept a bicycle tube there through [Pages 3-4, Paragraph 32];
- a housing [Figures 3-6: (104, 113)] coupled to the diffuser and having a passageway that is generally complementary to and aligned with the diffuser passageway so as to provide a continuous opening;
- a reflector [Figures 3-4 and 7-8: (116)] adjustably connected to the housing spaced apart from the housing passageway.

The examiner makes note of the last limitation in light of the specification, but has broadly interpreted [MPEP 2111] the limitation in this rejection. It should be further noted that it is obvious and commonly held that bicycles have an adjustable reflector attached to the bicycle shaft and/or other parts in order to provide safety and increase awareness of the surrounding environment of the rider's presence.

12. With regards to Claim 14, Pisula teaches the plurality of light sources being light emitting diodes [see Abstract].

13. With regards to Claim 15, Pisula teaches at least one light source being positioned in the reflector [Figures 7-8: (204)].

14. With regards to Claim 17, Pisula teaches the source of power having at least one battery [Figure 9: (299)].

15. With regards to Claim 18, Pisula teaches the at least one switch being an on-off switch [Page 5, Paragraph 39].

16. With regards to Claim 21, Pisula teaches a second housing having a second housing passageway extending there through. The second housing is coupled to the second end of the diffuser so as to have the second passageway approximately aligned with the diffuser passageway and wherein the second passageway is dimensioned for accepting a bicycle tube there through [Figures 3-4: (113)].

17. With regards to Claim 22, Pisula teaches the housing having at least one fastener [Figures 3-4: (188)] that engages the bicycle tube and securing the illuminating tube thereon [Page 4, Paragraph 34].

18. Claims 25-26, 28-29, and 32-33 are rejected under 35 U.S.C. 102(e) as being anticipated by Pisula (U.S. Publication 2004/0095776).

With regards to Claim 25, Pisula discloses a glow tube illumination device and illumination system for bicycles including:

- at least one light source [Figures 3-4: (146)];
- a source of power [Figures 9-10: (299)];
- an electrical circuit [Figures 3-4: (122); Figures 9-10: (59); Figure 11; Page 3, Paragraph 31] connecting the power source with the at least one light source;
- at least one switch connected in the electrical circuit [Figure 9: (287)];
- a generally elongate diffuser [Figures 3-4: (101)] positioned adjacent the at least one light source, wherein the diffuser is made of a translucent resilient material defining a central passageway extending there through and being of

sufficient dimension to accept a bicycle tube there through [Pages 3-4, Paragraph 32];

- a first housing [Figures 3-6: (104, 113)] coupled to the diffuser and having a passageway that is generally complementary to and aligned with the diffuser passageway so as to provide a continuous opening;
- a reflector [Figures 3-4 and 7-8: (116)] adjustably connected to the housing spaced apart from the housing passageway.

The examiner makes note of the last limitation in light of the specification, but has broadly interpreted [MPEP 2111] the limitation in this rejection. It should be further noted that it is obvious and commonly held that bicycles have an adjustable reflector attached to the bicycle shaft and/or other parts in order to provide safety and increase awareness of the surrounding environment of the rider's presence.

19. With regards to Claim 26, Pisula teaches the at least one light source being light emitting diodes [see Abstract].

20. With regards to Claim 28, Pisula teaches the source of power having at least one battery [Figure 9: (299)].

21. With regards to Claim 29, Pisula teaches the at least one switch being an on-off switch [Page 5, Paragraph 39].

22. With regards to Claim 32, Pisula teaches a second housing having a second housing passageway extending there through. The second housing is coupled to the second end of the diffuser so as to have the second passageway approximately aligned

with the diffuser passageway and wherein the second passageway is dimensioned for accepting a bicycle tube there through [Figures 3-4: (113)].

23. With regards to Claim 33, Pisula teaches the housing having at least one fastener [Figures 3-4: (188)] that engages the bicycle tube and securing the illuminating tube thereon [Page 4, Paragraph 34].

24. Claims 43-45 are rejected under 35 U.S.C. 102(e) as being anticipated by Pisula (U.S. Publication 2004/0095776).

25. With regards to Claim 43, Pisula discloses a glow tube illumination device and illumination system for bicycles including:

- mounting a lamp on the bicycle by receiving a bicycle tube in a passageway within the lamp [Figures 1-2: (35, 38, 41, 44, 47, 50, 53)];
- generating light from at least one light source that is adjacent to the bicycle tube [Figures 3-4: (146)] and connected to a power source [Figures 9-10: (299)] through an electrical circuit in the lamp [Figures 3-4: (122); Figures 9-10: (59); Figure 11; Page 3, Paragraph 31]
- diffusing the generated light through a diffuser [Figures 3-4: (101)] coupled to the light source, wherein the diffuser defines a passageway.

26. With regards to Claim 44, Pisula teaches the passageway through the diffuser being generally cylindrical [Figures 3-4: (101)].

27. With regards to Claim 45, Pisula teaches the passageway being generally central in position within the bicycle lamp [Figures 3-4: (101)].

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

28. Claims 1-3, 5-6, and 9-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pisula (U.S. Publication 2004/0095776) in view of Burnham (U.S. Patent 6017335).

With regards to Claim 1, Pisula discloses a glow tube illumination device and illumination system for bicycles including:

- a plurality of light sources [Figures 3-4: (146)];
- a source of power [Figures 9-10: (299)];
- an electrical circuit [Figures 3-4: (122); Figures 9-10: (59); Figure 11; Page 3, Paragraph 31] connecting the power source with the plurality of light sources;
- at least one switch connected in the electrical circuit [Figure 9: (287)];
- a diffuser [Figures 3-4: (101)] positioned adjacent at least one individual light source of the plurality of light sources, wherein the diffuser is made of a translucent resilient material defining a central passageway extending there through and being of sufficient dimension to accept a bicycle tube there through [Pages 3-4, Paragraph 32];

- a housing [Figures 3-6: (104, 113)] coupled to the diffuser and having a passageway that is generally complementary to and aligned with the diffuser passageway so as to provide a continuous opening;
- a reflector [Figures 3-4 and 7-8: (116)] adjustably connected to the housing spaced apart from the housing passageway.

The examiner makes note of the last limitation in light of the specification, but has broadly interpreted [MPEP 2111] the limitation in this rejection. It should be further noted that it is obvious and commonly held that bicycles have an adjustable reflector attached to the bicycle shaft and/or other parts in order to provide safety and increase awareness of the surrounding environment of the rider's presence.

Pisula does not specifically teach the translucent resilient material of the diffuser being supported on a helical coil.

Burnham discloses a method for making a tubular product using reinforcement with a helical wrap of one or more members applied at one or more controlled angles relative to the central axis to control apparent stiffness [see Abstract].

It would have been obvious to modify the illuminating bicycle tube of Pisula to incorporate the helical coil of Burnham in providing a resilient yet firm support for the tube.

29. With regards to Claim 2, Pisula teaches the plurality of light sources being light emitting diodes [see Abstract].

30. With regards to Claim 3, Pisula teaches at least one light source being positioned in the reflector [Figures 7-8: (204)].

31. With regards to Claim 5, Pisula teaches the source of power having at least one battery [Figure 9: (299)].

32. With regards to Claim 6, Pisula teaches the at least one switch being an on-off switch [Page 5, Paragraph 39].

33. With regards to Claim 9, Pisula teaches a second housing having a second housing passageway extending there through. The second housing is coupled to the second end of the diffuser so as to have the second passageway approximately aligned with the diffuser passageway and wherein the second passageway is dimensioned for accepting a bicycle tube there through [Figures 3-4: (113)].

34. With regards to Claim 10, Pisula teaches the housing having at least one fastener [Figures 3-4: (188)] that engages the bicycle tube and securing the illuminating tube thereon [Page 4, Paragraph 34].

35. Claims 4 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pisula (U.S. Publication 2004/0095776) in view of Burnham (U.S. Patent 6017335) as applied to Claim 1 above, and further in view of Lys et al. (U.S. Patent 6459919).

36. With regards to Claim 4, Pisula in view of Burnham teach an illuminating bicycle tube having a plurality of light sources as cited above.

Neither Pisula nor Burnham specifically teaches at least one of the light sources emitting ultraviolet light.

Lys discloses, "The term 'illuminate' should be understood to refer to the production of a frequency of radiation by an illumination source. The term 'color' should be understood to refer to any frequency of radiation within a spectrum; that is, a 'color',

as used herein, should be understood to encompass frequencies not only of the visible spectrum, but also frequencies in the infrared and ultraviolet areas of the spectrum, and in other areas of the electromagnetic spectrum [Column 6, Lines 20-28; underline added for emphasis]."

It is obvious that one could modify the illuminating bicycle tube of Pisula with the helical coil of Burnham to further incorporate a light with ultraviolet emission, as taught by Lys, in order to provide a preferred color and aesthetic appeal. Such a configuration is a matter of design preference.

37. With regards to Claim 7, Pisula in view of Burnham teach an illuminating bicycle tube having a switch.

Neither Pisula nor Burnham specifically teaches the switch having a light sensor.

Lys teaches the use of a light sensor [Figure 73: (719)], and to quote, "The light sensor 719 may detect changes in the external illumination conditions and send a signal 723 to one or more smart light bulbs 701 to alter the illumination in an interior space 725, to compensate for or otherwise respond to the external illumination conditions sensed by the light sensor 719 [Column 42, Lines 45-50]."

It is obvious that the light sensor of Lys acts as a switch in controlling the illumination, and would be further advantageous to modify the illuminating bicycle tube of Pisula with the helical coil of Burnham to incorporate such a light sensor in automatically switching on the light during dark/night conditions, thus ensuring greater safety to a rider.

38. Claims 8 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pisula (U.S. Publication 2004/0095776) in view of Burnham (U.S. Patent 6017335) as applied to Claim 1 above, and further in view of Fujita et al. (U.S. Patent 6517213).

Pisula in view of Burnham teach an illuminating bicycle tube as cited above.

Neither Pisula nor Burnham teach the illuminating bicycle tube having a diffuser made of a fluorescent material responsive to UV light, nor a reflector having fluorescent material responsive to UV light and where at least one light source of the plurality of light sources emits UV light.

Fujita discloses, "Further, for reference, the solid lines of FIGS. 12 to 14 represent fluorescence spectra projected from the green, orange, and red fluorescent plates, respectively, when a black light (ultraviolet light source) having a spectrum represented by the solid line of Fig. 11 enters the fluorescent plates. As shown in FIGS. 12 to 14, by projecting the light of the first wavelength from the blue LED element to the fluorescent plate, the light (fluorescence) of the second wavelength longer than the first wavelength can be projected from the fluorescent plate. Then, as discussed in the above preferred embodiments, the lights of the first and second wavelengths are guided towards the indicating surface, to make an optical indication entirely on the indicating surface with an indication color defined by the combination of the first and second wavelengths [Column 15, Line 63 – Column 16, Line 11]."

It would have been obvious to modify the illuminating bicycle tube of Pisula with the helical spring of Burnham to further incorporate the teaching of Fujita, whereby the diffuser and reflector of Pisula are made of a fluorescent material that is responsive to a

UV light source. Doing so provides a user a desired illumination color for an indication device [see Abstract of Fujita], as well as an aesthetic appeal.

39. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Pisula (U.S. Publication 2004/0095776) in view of Burnham (U.S. Patent 6017335) as applied to Claim 1 above, and further in view of Carne (U.S. Patent 6158881).

Pisula in view of Burnham teach an illuminating bicycle tube having a housing as cited above.

Neither Pisula nor Burnham specifically teaches the housing containing a power source, at least one light switch, and at least one light source.

Carne discloses a seat post having a hollow support that is partly inserted into a cycle frame, and includes a housing [Figure 1: (1)] containing a power source [Figure 1: (16)], a switch [Figure 1: (9, 10)], and a light source [Figure 1: (12)].

It would have been obvious to modify the illuminating bicycle tube of Pisula with the helical coil of Burnham to further incorporate the housing of Carne in order to provide a compact system that is more appealing to a user. Manufacturing would also be simplified wherein there would be less wiring or connections between the components.

40. Claims 16 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pisula (U.S. Publication 2004/0095776) as applied to Claim 13 above, and further in view of Lys et al. (U.S. Patent 6459919).

41. With regards to Claim 16, Pisula teaches an illuminating bicycle tube having a plurality of light sources as cited above.

Pisula does not specifically teach at least one of the light sources emitting ultraviolet light.

Lys discloses, "The term 'illuminate' should be understood to refer to the production of a frequency of radiation by an illumination source. The term 'color' should be understood to refer to any frequency of radiation within a spectrum; that is, a 'color', as used herein, should be understood to encompass frequencies not only of the visible spectrum, but also frequencies in the infrared and ultraviolet areas of the spectrum, and in other areas of the electromagnetic spectrum [Column 6, Lines 20-28; underline added for emphasis]."

It is obvious that one could modify the illuminating bicycle tube of Pisula to incorporate a light with ultraviolet emission, as taught by Lys, in order to provide a preferred color and aesthetic appeal. Such a configuration is a matter of design preference.

42. With regards to Claim 19, Pisula teaches an illuminating bicycle tube having a switch.

Pisula does not specifically teach the switch having a light sensor.

Lys teaches the use of a light sensor [Figure 73: (719)], and to quote, "The light sensor 719 may detect changes in the external illumination conditions and send a signal 723 to one or more smart light bulbs 701 to alter the illumination in an interior space 725, to compensate for or otherwise respond to the external illumination conditions sensed by the light sensor 719 [Column 42, Lines 45-50]."

It is obvious that the light sensor of Lys acts as a switch in controlling the illumination, and would be further advantageous to modify the illuminating bicycle tube of Pisula to incorporate such a light sensor in automatically switching on the light during dark/night conditions, thus ensuring greater safety to a rider.

43. Claims 20 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pisula (U.S. Publication 2004/0095776) as applied to Claim 13 above, and further in view of Fujita et al. (U.S. Patent 6517213).

Pisula teaches an illuminating bicycle tube as cited above.

Pisula does not specifically teach the illuminating bicycle tube having a diffuser made of a fluorescent material responsive to UV light, nor a reflector having fluorescent material responsive to UV light and where at least one light source of the plurality of light sources emits UV light.

Fujita discloses, "Further, for reference, the solid lines of FIGS. 12 to 14 represent fluorescence spectra projected from the green, orange, and red fluorescent plates, respectively, when a black light (ultraviolet light source) having a spectrum represented by the solid line of Fig. 11 enters the fluorescent plates. As shown in FIGS. 12 to 14, by projecting the light of the first wavelength from the blue LED element to the fluorescent plate, the light (fluorescence) of the second wavelength longer than the first wavelength can be projected from the fluorescent plate. Then, as discussed in the above preferred embodiments, the lights of the first and second wavelengths are guided towards the indicating surface, to make an optical indication entirely on the indicating

surface with an indication color defined by the combination of the first and second wavelengths [Column 15, Line 63 – Column 16, Line 11]."

It would have been obvious to modify the illuminating bicycle tube of Pisula to incorporate the teaching of Fujita, whereby the diffuser and reflector of Pisula are made of a fluorescent material that is responsive to a UV light source. Doing so provides a user a desired illumination color for an indication device [see Abstract of Fujita], as well as an aesthetic appeal.

44. Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Pisula (U.S. Publication 2004/0095776) as applied to Claim 13 above, and further in view of Carne (U.S. Patent 6158881).

Pisula teaches an illuminating bicycle tube having a housing as cited above.

Pisula does not specifically teach the housing containing a power source, at least one light switch, and at least one light source.

Carne discloses a seat post having a hollow support that is partly inserted into a cycle frame, and includes a housing [Figure 1: (1)] containing a power source [Figure 1: (16)], a switch [Figure 1: (9, 10)], and a light source [Figure 1: (12)].

It would have been obvious to modify the illuminating bicycle tube of Pisula to incorporate the housing of Carne in order to provide a compact system that is more appealing to a user. Manufacturing would also be simplified wherein there would be less wiring or connections between the components.

45. Claims 27 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pisula (U.S. Publication 2004/0095776) as applied to Claim 25 above, and further in view of Lys et al. (U.S. Patent 6459919).

46. With regards to Claim 27, Pisula teaches an illuminating bicycle tube having at least one light source as cited above.

Pisula does not specifically teach at least one light source emitting ultraviolet light.

Lys discloses, "The term 'illuminate' should be understood to refer to the production of a frequency of radiation by an illumination source. The term 'color' should be understood to refer to any frequency of radiation within a spectrum; that is, a 'color', as used herein, should be understood to encompass frequencies not only of the visible spectrum, but also frequencies in the infrared and ultraviolet areas of the spectrum, and in other areas of the electromagnetic spectrum [Column 6, Lines 20-28; underline added for emphasis]."

It is obvious that one could modify the illuminating bicycle tube of Pisula to incorporate a light with ultraviolet emission, as taught by Lys, in order to provide a preferred color and aesthetic appeal. Such a configuration is a matter of design preference.

47. With regards to Claim 30, Pisula teaches an illuminating bicycle tube having a switch.

Pisula does not specifically teach the switch having a light sensor.

Lys teaches the use of a light sensor [Figure 73: (719)], and to quote, "The light sensor 719 may detect changes in the external illumination conditions and send a signal 723 to one or more smart light bulbs 701 to alter the illumination in an interior space 725, to compensate for or otherwise respond to the external illumination conditions sensed by the light sensor 719 [Column 42, Lines 45-50]."

It is obvious that the light sensor of Lys acts as a switch in controlling the illumination, and would be further advantageous to modify the illuminating bicycle tube of Pisula to incorporate such a light sensor in automatically switching on the light during dark/night conditions, thus ensuring greater safety to a rider.

48. Claim 31 is rejected under 35 U.S.C. 103(a) as being unpatentable over Pisula (U.S. Publication 2004/0095776) as applied to Claim 25 above, and further in view of Fujita et al. (U.S. Patent 6517213).

Pisula teaches an illuminating bicycle tube as cited above.

Pisula does not specifically teach the illuminating bicycle tube having a diffuser made of a fluorescent material responsive to UV light.

Fujita discloses, "Further, for reference, the solid lines of FIGS. 12 to 14 represent fluorescence spectra projected from the green, orange, and red fluorescent plates, respectively, when a black light (ultraviolet light source) having a spectrum represented by the solid line of Fig. 11 enters the fluorescent plates. As shown in FIGS. 12 to 14, by projecting the light of the first wavelength from the blue LED element to the fluorescent plate, the light (fluorescence) of the second wavelength longer than the first wavelength can be projected from the fluorescent plate. Then, as discussed in the

above preferred embodiments, the lights of the first and second wavelengths are guided towards the indicating surface, to make an optical indication entirely on the indicating surface with an indication color defined by the combination of the first and second wavelengths [Column 15, Line 63 – Column 16, Line 11]."

It would have been obvious to modify the illuminating bicycle tube of Pisula to incorporate the teaching of Fujita, whereby the diffuser of Pisula is made of a fluorescent material that is responsive to a UV light source. Doing so provides a user a desired illumination color for an indication device [see Abstract of Fujita], as well as an aesthetic appeal.

49. Claim 34 is rejected under 35 U.S.C. 103(a) as being unpatentable over Pisula (U.S. Publication 2004/0095776) as applied to Claim 25 above, and further in view of Carne (U.S. Patent 6158881).

Pisula teaches an illuminating bicycle tube having a first housing as cited above.

Pisula does not specifically teach the housing containing a power source, at least one light switch, and at least one light source.

Carne discloses a seat post having a hollow support that is partly inserted into a cycle frame, and includes a housing [Figure 1: (1)] containing a power source [Figure 1: (16)], a switch [Figure 1: (9, 10)], and a light source [Figure 1: (12)].

It would have been obvious to modify the illuminating bicycle tube of Pisula to incorporate the housing of Carne in order to provide a compact system that is more appealing to a user. Manufacturing would also be simplified wherein there would be less wiring or connections between the components.

50. Claims 35-38 and 40-41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pisula (U.S. Publication 2004/0095776) in view of Fujita et al. (U.S. Patent 6517213).

With regards to Claim 35, Pisula discloses a glow tube illumination device and illumination system for bicycles including:

- at least one source of light [Figures 3-4: (146)];
- a source of power [Figures 9-10: (299)];
- an electrical circuit [Figures 3-4: (122); Figures 9-10: (59); Figure 11; Page 3, Paragraph 31] connecting the power source with the plurality of light sources;
- at least one switch connected in the electrical circuit [Figure 9: (287)];
- a diffuser [Figures 3-4: (101)] positioned adjacent at least one light source, wherein the diffuser defines a central passageway extending there through and being of sufficient dimension to accept a bicycle tube there through [Pages 3-4, Paragraph 32];
- a housing [Figures 3-6: (104, 113)] coupled to the diffuser and having a passageway that is generally complementary to and aligned with the diffuser passageway so as to provide a continuous opening for the bicycle tube.

Pisula does not specifically teach the illuminating bicycle tube having a diffuser made of a fluorescent material responsive to at least one source of light that is ultraviolet in emission.

Fujita discloses, "Further, for reference, the solid lines of FIGS. 12 to 14 represent fluorescence spectra projected from the green, orange, and red fluorescent

plates, respectively, when a black light (ultraviolet light source) having a spectrum represented by the solid line of Fig. 11 enters the fluorescent plates. As shown in FIGS. 12 to 14, by projecting the light of the first wavelength from the blue LED element to the fluorescent plate, the light (fluorescence) of the second wavelength longer than the first wavelength can be projected from the fluorescent plate. Then, as discussed in the above preferred embodiments, the lights of the first and second wavelengths are guided towards the indicating surface, to make an optical indication entirely on the indicating surface with an indication color defined by the combination of the first and second wavelengths [Column 15, Line 63 – Column 16, Line 11]."

It would have been obvious to modify the illuminating bicycle tube of Pisula to incorporate the teaching of Fujita, whereby the diffuser of Pisula is made of a fluorescent material that is responsive to a UV light source. Doing so provides a user a desired illumination color for an indication device [see Abstract of Fujita], as well as an aesthetic appeal.

51. With regards to Claim 36, Pisula teaches the at least one light source being light emitting diodes [see Abstract].

52. With regards to Claim 37, Pisula teaches the source of power having at least one battery [Figure 9: (299)].

53. With regards to Claim 38, Pisula teaches the at least one switch being an on-off switch [Page 5, Paragraph 39].

54. With regards to Claim 40, Pisula teaches a second housing having a second housing passageway extending there through. The second housing is coupled to the

second end of the diffuser so as to have the second passageway approximately aligned with the diffuser passageway and wherein the second passageway is dimensioned for accepting a bicycle tube there through [Figures 3-4: (113)].

55. With regards to Claim 41, Pisula teaches the housing having at least one fastener [Figures 3-4: (188)] that engages the bicycle tube and securing the illuminating tube thereon [Page 4, Paragraph 34].

56. Claim 39 is rejected under 35 U.S.C. 103(a) as being unpatentable over Pisula (U.S. Publication 2004/0095776) in view of Fujita et al. (U.S. Patent 6517213) as applied to Claim 35 above, and further in view of Lys et al. (U.S. Patent 6459919).

Pisula in view of Fujita teach an illuminating bicycle tube having a switch.

Neither Pisula nor Fujita specifically teach the switch having a light sensor.

Lys teaches the use of a light sensor [Figure 73: (719)], and to quote, "The light sensor 719 may detect changes in the external illumination conditions and send a signal 723 to one or more smart light bulbs 701 to alter the illumination in an interior space 725, to compensate for or otherwise respond to the external illumination conditions sensed by the light sensor 719 [Column 42, Lines 45-50]."

It is obvious that the light sensor of Lys acts as a switch in controlling the illumination, and would be further advantageous to modify the illuminating bicycle tube of Pisula with the UV light and fluorescent responsive material of Fujita to further incorporate such a light sensor in automatically switching on the light during dark/night conditions, thus ensuring greater safety to a rider.

57. Claim 42 is rejected under 35 U.S.C. 103(a) as being unpatentable over Pisula (U.S. Publication 2004/0095776) in view of Fujita et al. (U.S. Patent 6517213) as applied to Claim 35 above, and further in view of Carne (U.S. Patent 6158881).

Pisula in view of Fujita teach an illuminating bicycle tube having a housing as cited above.

Neither Pisula nor Fujita specifically teach the housing containing a power source, at least one light switch, and at least one light source.

Carne discloses a seat post having a hollow support that is partly inserted into a cycle frame, and includes a housing [Figure 1: (1)] containing a power source [Figure 1: (16)], a switch [Figure 1: (9, 10)], and a light source [Figure 1: (12)].

It would have been obvious to modify the illuminating bicycle tube of Pisula with the UV light and fluorescent responsive material of Fujita to further incorporate the housing of Carne in order to provide a compact system that is more appealing to a user. Manufacturing would also be simplified wherein there would be less wiring or connections between the components.

58. Claims 46-48 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pisula (U.S. Publication 2004/0095776) as applied to Claim 43 above, and further in view of Fujita et al. (U.S. Patent 6517213).

Pisula teaches an illuminating bicycle tube as cited above.

Pisula does not specifically teach the illuminating bicycle tube emitting a UV light nor a fluorescent material being excited to produce a fluorescent light.

Fujita discloses, "Further, for reference, the solid lines of FIGS. 12 to 14 represent fluorescence spectra projected from the green, orange, and red fluorescent plates, respectively, when a black light (ultraviolet light source) having a spectrum represented by the solid line of Fig. 11 enters the fluorescent plates. As shown in FIGS. 12 to 14, by projecting the light of the first wavelength from the blue LED element to the fluorescent plate, the light (fluorescence) of the second wavelength longer than the first wavelength can be projected from the fluorescent plate. Then, as discussed in the above preferred embodiments, the lights of the first and second wavelengths are guided towards the indicating surface, to make an optical indication entirely on the indicating surface with an indication color defined by the combination of the first and second wavelengths [Column 15, Line 63 – Column 16, Line 11]."

It would have been obvious to modify the illuminating bicycle tube of Pisula to incorporate the teaching of Fujita, whereby the diffuser of Pisula could be made of a fluorescent material that is responsive to a UV light source. Doing so provides a user a desired illumination color for an indication device [see Abstract of Fujita], as well as an aesthetic appeal. It is also obvious that an illumination that transmits through a fluorescent material would produce a fluorescent light.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The following references have been cited to further show the state of the art pertinent to the current application:

US Patent 2151485 to Reuben;

US Patent 3834423 to Elson;

US Patent 3889717 to Obadal et al;

US Patent 3890033 to McGee;

US Patent 4005874 to Ohtani;

US Patent 4047150 to Kelley;

US Patent 4088882 to Lewis;

US Patent 4204191 to Daniels;

US Patent 4215390 to Brandt;

US Patent 4325108 to Spingler;

US Patent 4422719 to Orcutt;

US Patent 4715681 to Johnson;

US Patent 4814951 to Larsen;

US Patent 4819135 to Padilla et al;

US Patent 5197795 to Mudrovich;

US Patent 5276593 to Lighthill et al;

US Patent 5526240 to Kuo;

US Patent 5618052 to Rendall;

US Patent 5823653 to Elam et al;

US Patent 5871269 to Chien;

US Patent 6031958 to McGaffigan;

US Patent 6139174 to Butterworth;

US Patent 6249372 to Kobayashi et al;

US Patent 6417019 to Mueller et al;

US Patent 6533438 to Ter-Hovhannisian;

US Patent 6779913 to Niezrecki et al;

US Publication 2003/0155856 to Robertson et al;

US Publication 2003/0155856 to Shiiki et al.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason M Han whose telephone number is (571) 272-2207. The examiner can normally be reached on 8:00am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sandra O'Shea can be reached on (571) 272-2378. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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